

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the above-referenced application.

Listing of Claims:

Claims 1-27 (Cancelled)

28. (Currently amended) [[The]] A ball transfer system, as set forth in claim 27, wherein said ball arraying apparatus includes comprising:

a ball arraying apparatus for arraying conductive balls in an array of recesses formed in a first substrate in the presence of electrolyte, said array of recesses being laid on a pattern identical with a pattern of conductive pads formed on a second substrate, and

a ball transfer apparatus for transferring said conductive balls from said recesses on said first substrate to said array of pads on said second substrate,

a bath filled with said electrolyte,

a substrate conveying unit dipping said first substrate in said electrolyte, inclining said first substrate in said electrolyte and moving said first substrate from said bath to said ball transfer apparatus, and

a ball feeder provided over said bath and feeding said conductive balls onto said first substrate.

29. (Currently amended) [[The]] A ball transfer system, as set forth in claim 27, wherein said ball arraying apparatus includes comprising:

a ball arraying apparatus for arraying conductive balls in an array of recesses formed in a first substrate in the presence of electrolyte, said array of recesses being laid on a pattern identical with a pattern of conductive pads formed on a second substrate, and

a ball transfer apparatus for transferring said conductive balls from said recesses on said first substrate to said array of pads on said second substrate,

a bath filled with said electrolyte and driven for rotation,

a substrate conveying unit dipping said first substrate in said electrolyte and moving said first substrate from said bath to said ball transfer apparatus, and

a ball feeder provided over said bath and feeding said conductive balls onto said first substrate while said bath is being driven for rotation.

30. (Previously presented) [[The]] A ball transfer system, as set forth in claim 27, wherein said ball arraying apparatus includes comprising:

a ball arraying apparatus for arraying conductive balls in an array of recesses formed in a first substrate in the presence of electrolyte, said array of recesses being laid on a pattern identical with a pattern of conductive pads formed on a second substrate, and

a ball transfer apparatus for transferring said conductive balls from said recesses on said first substrate to said array of pads on said second substrate,

a substrate table retaining said first substrate and changed between a horizontal position and an inclined position,

a substrate conveying unit moving said first substrate onto said substrate table and from said substrate table to said ball transfer apparatus, and

a feeder supplying said conductive balls and said electrolyte onto said first substrate on said substrate table in said inclined position.

Claims 31 - 32 (Cancelled)

33. (Currently amended) [[The]] A ball arraying apparatus, as set forth in claim 32, comprising:
a substrate formed with plural recesses laid on a pattern of an array of conductive
pads on a target plate, open to a surface thereof and receiving conductive bumps,
respectively,
a means for supplying electrolyte to said substrate so that said electrolyte flows
over said surface, and
a means for supplying said conductive balls onto said surface so that said
conductuve balls are moved on said surface together with said electrolyte,
wherein said substrate is further formed with a drain passage connected to said
recesses for flowing out said liquid after said conductive bumps are received in said
plural recesses, respectively, and wherein said drain passage has a hollow space and
plural drain holes respectively associated with said plural recesses and connected
between said hollow space and the associated recesses.

Claims 34 - 35 (Cancelled)

36. (Currently amended) [[The]] A ball arraying apparatus, as set forth in claim 35, comprising:
a substrate formed with plural recesses laid on a pattern of an array of conductive
pads on a target plate, open to a surface thereof and receiving conductive bumps,
respectively,
a means for supplying electrolyte to said substrate so that said electrolyte flows
over said surface, and
a means for supplying said conductive balls onto said surface so that said
conductuve balls are moved on said surface together with said electrolyte,
wherein said substrate is further formed with holes offset from said recesses so as
to permit said electrolyte to flow out therethrough, and wherein said substrate includes a
first plate formed with said recesses and a second plate formed with said holes and fixed
to said first plate.

37. (Previously presented) The ball arraying apparatus as set forth in claim 36, wherein said first plate is fixed to said second plate through a diffusion bonding.

Claims 38 - 39 (Cancelled)

40. (Currently amended) A ball transfer system, comprising:

a ball arraying apparatus that arrays conductive balls in an array of recesses formed in a first substrate in the presence of electrolyte, said array of recesses being laid on a pattern substantially identical with a pattern of conductive pads formed on a second substrate;

a ball transfer apparatus that transfers said conductive balls from said recesses on said first substrate to said array of pads on said second substrate; and

a substrate conveying unit that dips said first substrate in said electrolyte, inclines said first substrate in said electrolyte and moves said first substrate from said [[bath]] electrolyte to said ball transfer apparatus.

41. (Currently amended) The ball arraying system as set forth in claim [[41]] 40, wherein said first substrate includes an array of drain holes associated with said array of recesses, said array of drain holes being offset from said array of recesses.

42. (Currently amended) The ball arraying system as set forth in claim [[41]] 40, wherein said first substrate is one of a wafer and a pallet.

Claims 43 - 44 (Cancelled)